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AMPHOLYTE TERPOLYMERS PROVIDING SUPERIOR CONDITIONING PROPERTIES IN SHAMPOOS AND OTHER HAIR CARE PRODUCTS

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(57) Claim

1. A composition for treating hair in which a cosmetically acceptable medium is used which contains from 0.1-10% by weight of a water soluble ampholyte terpolymer having a weight average molecular weight of from about 10 thousand to 10 million, comprising:

(a) from at least 1 to as much as 95 weight percent of a nonionic monomer comprising from 1 to 3 members independently selected from the group consisting of the following monomers and derivatives thereof:

acrylamide (AM)
N-alkylacrylamide (NAAM)
N-vinylpyrrolidinone (VP)
methacrylamide (MAM)
vinylacetate (VA)
vinyl alcohol (VOH)
acrylate esters
allyl alcohol (AAlc)

(b) from at least 5 to as much as 80 weight percent of a cationic monomer comprising 1 or 2 members independently selected from the group consisting of the following monomers and derivatives thereof:

dimethyldiallylammonium chloride (DMDAAC)
diallylamine (DAA)
methyldiallylamine (MDAA)
N,N-dialkyldiallylammonium chloride
dimethylaminoethylmethacrylate (DMAEM)
methacyloyloxyethyl trimethylammonium chloride (METAC)
methacyloyloxyethyl trimethylammonium metyl sulfate (METAMS)

acryloyloxyethyl trimethylammonium chloride (AETAC)
dimethylaminopropylmethacrylamide (DMAPMA)
methacrylamidopropyl trimethylammonium chloride (MAPTAC)

and

(c) from at least 1 to as much as 75 weight percent of an anionic monomer comprising 1 or 2 members independently selected from the group consisting of the following monomers and derivatives thereof:

acrylic acid (AA)
methacrylic acid (MAA)
2-acrylamido-2-methylpropanesulfonic acid (AMPSA)
crotonic acid (CA)
sodium vinyl sulfonate (SVS)
acrylamidoglycolic acid (AGly)
2-acrylamido-2-methylbutanoic acid (AMBA)
2-acrylamido-2-methylpropanephosphonic acid (AMPPA)
sodium vinyl phosphonate (SVP)
allyl phosphonic acid ((APA).

5. A composition according to Claim 1 wherein the cosmetically acceptable medium is an anionic surfactant-containing shampoo.

10. A method of treating hair in conjunction with the shampooing thereof with an anionic surfactant-containing shampoo, so as to improve the conditioning thereof with respect to the properties of detangling, wet combability, wet feel, dry combability, dry feel, sheen, static flyaway control, and curl retention,

comprising applying to said hair a composition compatible with said anionic surfactant-containing shampoo such that a clear formulation thereof is provided without the loss of said conditioning properties, wherein said composition comprises a cosmetically acceptable medium containing from 0.1-10% by weight of a water soluble ampholyte terpolymer having a weight average molecular weight of from about 10 thousand to 10 million, comprising:

(a) from at least 1 to as much as 95 weight percent of a nonionic monomer comprising from 1 to 3 members independently selected from the group consisting of the following monomers and derivatives thereof:

acrylamide (AM)	vinylacetate (VA)
N-alkylacrylamide (NAAM)	vinyl alcohol (VOH)
N-vinylpyrrolidinone (VP)	acrylate esters
methacrylamide (MAM)	allyl alcohol (AAlc)

(b) from at least 5 to as much as 80 weight percent of a cationic monomer comprising 1 or 2 members independently selected from the group consisting of the following monomers and derivatives thereof:

dimethyldiallylammonium chloride (DMDAAC)
diallylamine (DAA)
methyldiallylamine (MDAA)
N,N-dialkyldiallylammonium chloride
dimethylaminoethylmethacrylate (DMAEM)
methacyloyloxyethyl trimethylammonium chloride (METAC)
methacyloyloxyethyl trimethylammonium metyl sulfate

(METAMS)
acryloyloxyethyl trimethylammonium chloride (AETAC)
dimethylaminopropylmethacrylamide (DMAPMA)
methacrylamidopropyl trimethylammonium chloride
(MAPTAC)

and

(c) from at least 1 to as much as 75 weight percent of an anionic monomer comprising 1 or 2 members independently selected from the group consisting of the following monomers and derivatives thereof:

acrylic acid (AA)
methacrylic acid (MAA)
2-acrylamido-2-methylpropanesulfonic acid (AMPSA)
crotonic acid (CA)
sodium vinyl sulfonate (SVS)
acrylamidoglycolic acid (AGly)
2-acrylamido-2-methylbutanoic acid (AMBA)
2-acrylamido-2-methylpropanephosphonic acid (AMPPA)
sodium vinyl phosphonate (SVP)
allyl phosphonic acid ((APA).